

# IN-HOME QUALITY IMPROVEMENT

## **BEST PRACTICE: DISEASE MANAGEMENT** **Chronic Obstructive Pulmonary Disease**

### **NURSE TRACK**



Best Practice Intervention Packages were designed for use by any In-Home Provider Agency to support reducing avoidable hospitalizations and emergency room visits. Any In-Home care nurse/clinician can use these educational materials.

Best Practice Intervention Packages were designed to educate and create awareness of strategies and interventions to reduce avoidable hospitalizations and unnecessary emergency room visits.

# Nurse Track

This best practice intervention package track is designed to educate nurses in disease management and to provide an update on symptom management of high-risk diagnosis.



Chronic Obstructive Pulmonary Disease (COPD) is presented as the primary resource for this Disease Management package. You or your agency management may want to elect to pursue Heart Failure as an associated package.

## Objectives

After completing the activities included in the Nurse Track of this Best Practice Intervention Package, *Disease Management*, the learner will be able to:

1. Identify the role of In-Home Services in disease management and reducing avoidable acute care hospitalizations
2. Apply current assessment and symptom management modalities in daily practice
3. Describe two nursing actions that support an effective disease management program

Complete the following activities:

- Read Disease Management and In-Home Services.
- Read “Polish Your Practice: COPD”.
- Review the Decision Support Tool: COPD.
- Complete the Nursing Post Test.

Disclaimer: Some of the information contained within this Best Practice Intervention Package may be more directed and intended for an acute care setting, or a higher level of care or skilled level of care setting such as those involved in Medicare. The practices, interventions and information contained are valuable resources to assist you in your knowledge and learning.

Disclaimer: All forms included are optional forms; each can be used as Tools, Templates or Guides for your agency and as you choose. Your individual agency can design or draft these forms to be specific to your own agency’s needs and setting.

# Disease Management and In-Home Services

## Definition:

**Disease Management** is a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant (DMAA, 2007).

## Acute Care Hospitalization Connection:

A formal disease management program was one of the top 15 strategies used by agencies that had the lowest acute care hospitalization rates of 19 percent or less (Briggs National Quality Improvement Reduction Study of 2006). Patients who survive a severe exacerbation of chronic obstructive pulmonary disease (COPD) are at high risk of rehospitalization for COPD and death. The risk of rehospitalization for COPD was 25 percent at one year and 44 percent at 5 years, and was increased by age, male gender, prior hospitalizations and comorbidities including asthma and pulmonary hypertension.

## Patient Education:

Disease management's success will lie within patient and caregiver education and patient self-management. The Institute for Healthcare Improvement (IHI) identified typical failures found in patient and caregiver education, which included the following:

- Assuming the patient is the key learner
- Poor discharge planning instructions
- Patient and caregiver confusion about patient self-care instructions and medications
- Non-adherent patients, resulting in unplanned readmissions

IHI's recommended changes included the following:

- Identify the key learner(s) on admission (e.g. patient, specific caregiver, family)
- Redesign patient education process to improve patient and family understanding of self-management
- Use **Teach Back** during visits and phone calls to assess patient's and caregivers' understanding of instructions and self-care

### Teach Back

After teaching has occurred ask patient and/or caregiver to repeat it back or **teach back** the information to the clinician to evaluate that appropriate learning occurred.

## Transitional Care Coordination:

Disease management is not an inclusive intervention for home care. Ideally disease management goes across the continuum from home to hospital to physician office, etc. Transitional Care has been defined as a set of actions designed to ensure the **coordination** and **continuity** of health care as patients transfer between different locations or different levels of care. (For more information, refer to the Transitional Care Coordination Best Practice Package).

# Polish Your Practice: COPD



## Polish Your Practice: COPD

### Definition

Chronic obstructive pulmonary disease (COPD) is characterized by the progressive development of airflow limitation that is not reversible and it encompasses chronic obstructive bronchitis, emphysema and mucus plugging. Most patients with COPD have all three conditions. COPD affects 14-20 million Americans each year.

### Pathophysiology

COPD is a disease state characterized by airflow limitation that is not fully reversible. The airflow limitation is usually both progressive and associates with an abnormal **inflammatory** response of the lungs to noxious particles or gases. It is likely that there are interactions between environmental factors and a genetic predisposition to COPD, which makes some people more prone to develop COPD than others.

There is a chronic inflammatory process in COPD that differs from that seen with asthma. Over time, those with COPD not only develop a chronic cough, but experience changes in lung capacity, purulent sputum and a decline in pulmonary function. Many develop weight loss and fatigue since they can't eat or sleep due to the dyspnea and possible respiratory distress.

The most important risk factor for COPD is cigarette smoking. A diagnosis of COPD should be considered in any individual with symptoms and a history of exposure to risk factors. The diagnosis should be confirmed by spirometry.

### Symptoms (Acute worsening of these symptoms occurs during exacerbations)

✓ Dyspnea <ul style="list-style-type: none"><li>• Patient's subjective awareness of altered or uncomfortable breathing</li><li>• Most common symptom characterizing pulmonary pathophysiology</li></ul> May assess using the modified Borg perceived level of dyspnea scale
✓ Cough <ul style="list-style-type: none"><li>• Can be debilitating associated with sleeplessness, fatigue and chest pain</li></ul>
✓ Sputum production
✓ Respiratory distress <ul style="list-style-type: none"><li>• Physical or emotional suffering that results from the experience of dyspnea can be observed and measured objectively in the absence of a patient self-report</li></ul>
✓ Sleeplessness

**Symptom exacerbations** are often associated with COPD. They may be caused by pulmonary infections or an increase in air pollution, but the cause of about 30 percent of severe exacerbations can't be identified. If the patient's risk for respiratory acidosis has been determined and stabilized, patients can typically be managed at home with success.

Determine disease **severity** for an individual with consideration of patient's symptoms, complications, general respiratory status, co-morbidities and general health status.

## Assessment Parameters

<p>1. Take <b>vital signs</b> including blood pressure, heart rate, temperature, oxygen saturation and weight. <i>Note:</i> Obtaining this information allows the clinician to identify changes in condition.</p>
<p>2. <b>Level of dyspnea</b> at rest and with activity should be assessed with each visit. <i>Note:</i> Increasing dyspnea is the main symptom associated with COPD exacerbation.</p>
<p>3. <b>Abdominal girth</b> should be obtained at least weekly, more often if there are changes identified. <i>Note:</i> This allows the clinician early identification of fluid retention that may indicate early diastolic heart failure development. Abdominal girth and weight also allow for evaluation of nutritional status.</p>
<p>4. <b>Lung sounds</b> should be obtained to identify worsening of condition or the presence of fluid or pneumonia. <i>Note:</i> Lung sounds will often be diminished, so subtle changes will be immensely important.</p>
<p>5. <b>Sleeping patterns</b> should be assessed. <i>Note:</i> This helps to determine if patient is having increased orthopnea (need to sleep propped up to breath comfortably), and to determine if patient is getting enough restorative sleep to prevent deterioration of condition.</p>
<p>6. Consider home health referral. If patient complains of increased shortness of breath at night or in the morning, obtain an <b>overnight pulse oximetry</b>. <i>Note:</i> This helps to determine if patient has lower oxygen saturations, possibly due to breathing through the mouth at night, or there may be a presence of obstructive sleep apnea and patient may require a sleep study to determine if CPAP or BiPAP is indicated.</p>
<p>7. <b>Evaluate nutritional status</b>. <i>Note:</i> This helps to determine if patient is eating adequate amounts of calories and protein to meet the body's metabolic needs and to prevent muscle breakdown which can lead to increasing immobility due to weakness and increased fall risk.</p>
<p>8. <b>Evaluate psychosocial status</b>. <i>Note:</i> Depression and poor coping are common in this patient population and may need to be addressed.</p>
<p>9. Assess for the <b>presence of compensatory breathing techniques</b>, including the use of pursed-lip breathing, diaphragmatic breathing, use of the tripod position or use of accessory muscles. <i>Note:</i> Changes in breathing technique may be a signal of worsening condition.</p>
<p>10. Check <b>sputum color and amount</b>. <i>Note:</i> This may indicate a worsening of the condition or the development of pneumonia.</p>
<p>11. <b>Medication reconciliation</b> is essential. <i>Note:</i> This is the process of identifying the most accurate list possible of all medications a patient is taking and comparing that list against the physician and/or hospital discharge orders, with the goal of providing correct medications.</p>

# Treatment of COPD

The quality of life for a person suffering from COPD diminishes as the disease progresses. None of the existing medications for COPD has been shown to improve the long-term decline in lung function, therefore the goal of treatment is to provide relief of symptoms and prevent complications and/or progression of the disease with minimal side effects.

## Pharmacological

Primary treatment for COPD is pharmacological, using a combination of bronchodilators, both short-acting and long-acting, systemic corticosteroids and antibiotics as needed for exacerbations of bronchitis or pneumonia.

## Immunization

Further treatment includes ensuring patients receive flu and pneumonia vaccines if they have no allergies or contraindications.

## Oxygen

Oxygen therapy may eventually be needed to help ensure adequate supply to the tissues of the body to prevent stimulation of the sympathetic nervous system and renal cascade that can lead to the development of heart failure and increase oxygen demand.

## Pulmonary Rehabilitation

Pulmonary Rehabilitation consisting of exercise training is beneficial to help patients prevent further deterioration of lung function, and help patient cope physically, psychologically and socially with COPD.

## AAT Replacement Therapy

For patients with Alpha-1 Antitrypsin Deficiency related emphysema, treatment includes life-long AAT replacement therapy.

## Smoking Cessation

Smoking cessation classes, medications and alternative methods can assist patients to stop smoking.

(Polish Your Practice: COPD)

## Pharmacologic Management for COPD

Medication	Action	Observation Parameters
<p><b>Bronchodilators</b> Inhaled preferred to oral (long and short acting)</p> <ul style="list-style-type: none"> <li>– Beta 2 agonists</li> <li>– Anticholinergics</li> <li>– Methylxanthines</li> </ul>	<ul style="list-style-type: none"> <li>• Short acting bronchodilators last about 4-6 hours and are used only prn</li> <li>• Long-acting b bronchodilators last about 12 hours and are used every day when indicated</li> <li>• Relaxes smooth muscle of bronchi and open constricted airway passages</li> <li>• Prescribed for maintenance treatment of bronchospasm</li> </ul>	<ul style="list-style-type: none"> <li>• Observe patient use of metered-dose inhalers and re-instruct in technique as appropriate</li> <li>• Observe for methylxanthines, potential side effects and adverse drug interactions</li> </ul>
<p><b>Glucocorticosteroids</b> (Inhaled/ingested)</p>	<ul style="list-style-type: none"> <li>• Inhaled corticosteroids reduce the frequency of COPD exacerbations, but they are not useful for symptom control</li> <li>• High dose oral corticosteroids may improve lung function, but they have no clinically significant benefits for patient-oriented outcomes; inhaled corticosteroids should be used instead.</li> <li>• Relieves inflammation and swelling of tissues of the lung</li> <li>• Reduces fluid build-up and bronchospasm</li> </ul>	<ul style="list-style-type: none"> <li>• Observe patient use of inhalers and re-instruct in techniques as appropriate</li> <li>• Monitor weight, blood pressure, s/s infections/gastric distress, skin condition</li> <li>• Monitor glucose levels and renal function</li> </ul>
<p><b>Immunization</b></p> <ul style="list-style-type: none"> <li>– Influenza</li> <li>– Pneumococcal</li> </ul>	<ul style="list-style-type: none"> <li>• Influenza vaccination minimizes severity of influenza symptoms</li> <li>• Pneumococcal vaccination provides protection for the prevention of pneumonia</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage influenza immunization annually, if not contraindicated</li> <li>• Encourage pneumococcal immunization per protocols (including non-flu season)</li> </ul>
<p><b>Antibiotics</b></p>	<ul style="list-style-type: none"> <li>• Use to treat infectious exacerbations only</li> <li>• If the exacerbation is associated with changes in sputum (quality, volume, or color) and increased dyspnea, cough, or fever, treatment with antibiotics is reasonable</li> </ul>	<ul style="list-style-type: none"> <li>• Observe closely for response to treatment</li> </ul>
<p><b>Psychotropics</b></p> <ul style="list-style-type: none"> <li>– Anti-anxiety</li> <li>– Antidepressants</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces anxiety and aid in relaxation</li> </ul>	<ul style="list-style-type: none"> <li>• Observe response, signs of drowsiness, balance deficits, suicidal ideation</li> <li>• Assess for orthostatic hypotension</li> </ul>
<p><b>Diuretics</b></p>	<ul style="list-style-type: none"> <li>• Eliminates excess fluid thereby reducing fluid build-up in lungs</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor daily weight</li> <li>• Monitor lab values for BNP, electrolytes and renal function</li> </ul>
<p><b>Oxygen therapy</b></p>	<ul style="list-style-type: none"> <li>• Helps prevent hypoxemia</li> <li>• Improves sleep, cognition, activity tolerance and reduces breathlessness</li> <li>• Long term <math>O_2</math> therapy (&gt;15 hours/day) may increase survival &amp; exercise capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor pulse oximetry; keep daily log; maintain <math>SaO_2</math> of at least 90 percent</li> <li>• Teach proper use of equipment: concentrator, compressed <math>O_2</math> cylinders, liquid <math>O_2</math>; review use of flow meters and regulators</li> </ul>

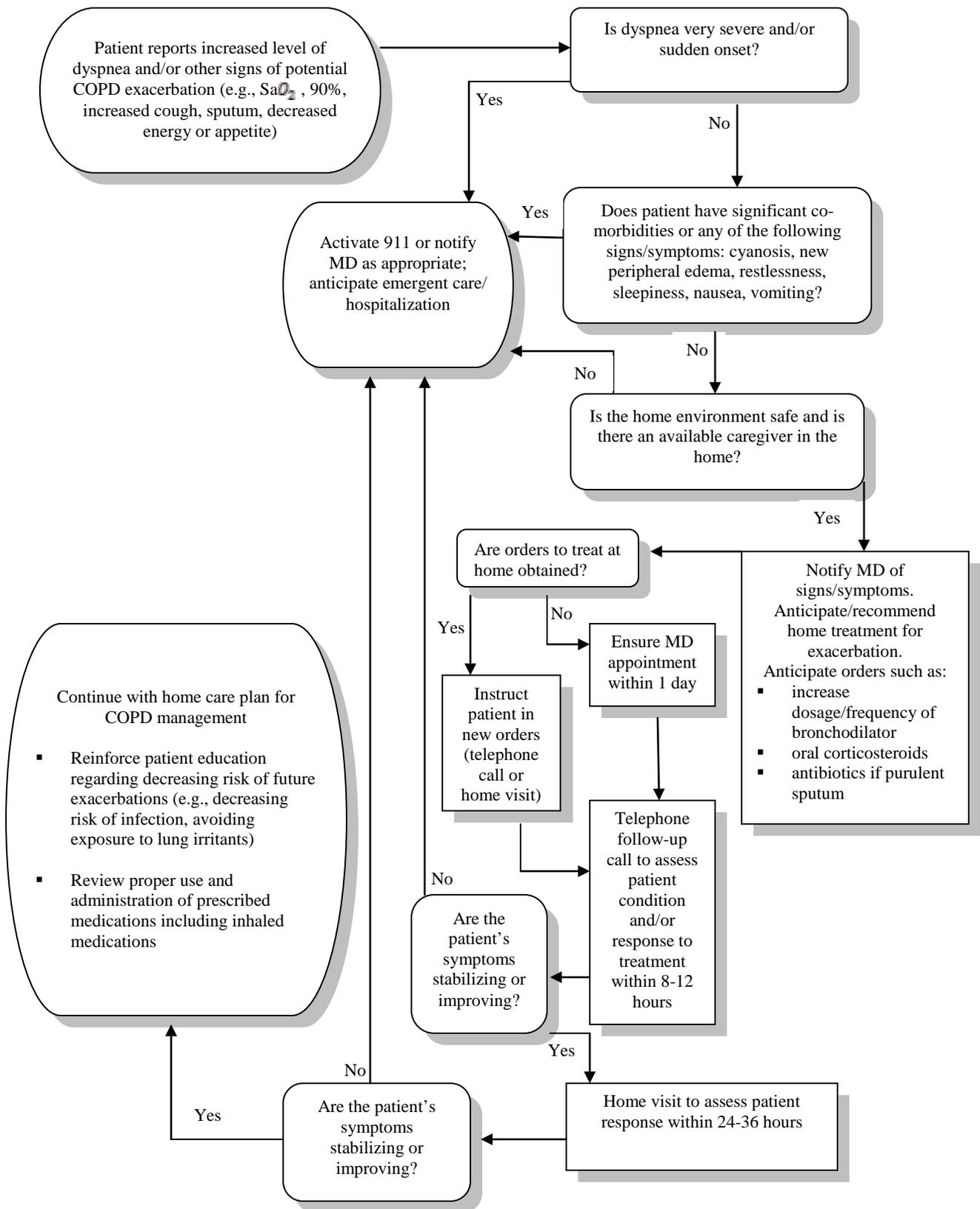
(Polish Your Practice: COPD)

<b>Exacerbation Indicators for Possible Hospitalization</b>	
Marked increase in symptom intensity, such as sudden development of resting dyspnea	Newly occurring dysrhythmias
Onset of new physical signs such as cyanosis and peripheral edema	Insufficient home support
Failure of exacerbation to respond to initial medical management	Instruct patient on keeping a written log of weights and taking it to every doctor visit
Malnutrition, exhaustion, depression or sleep deprivation	Inability to manage self in absence of caregiver

## **Self-Management**

<b>Self-Management</b>	<b>Self-Management Support</b>
<b>SMOKING CESSATION!!!</b>	<ul style="list-style-type: none"> <li>Assist patient in obtaining assistance with smoking cessation if indicated</li> </ul>
Participate in a home exercise program that helps strengthen muscles, increase lung elasticity and includes energy conservation techniques.	<ul style="list-style-type: none"> <li>Consult physical and/or occupational therapy to help patient develop a home exercise program</li> <li>Teach patient effective breathing techniques, such as pursed lip breathing or diaphragmatic breathing</li> <li>Teach patient pacing strategies for activities to assist with energy conservation</li> </ul>
Eat small, frequent, high protein meals that are easy to chew. Drink plenty of fluids to thin secretions and aid in their elimination.	<ul style="list-style-type: none"> <li>Assist patient with meal planning; many COPD patients are protein malnourished as nutrition is poor</li> <li>Help patients choose foods that have high protein content to help prevent muscle breakdown</li> </ul>
Take all medications as prescribed.	<ul style="list-style-type: none"> <li>Instruct patient on actions, benefits and side effects of medications; greater understanding of the reason for taking medications increases compliance</li> <li>Observe patient's ability to use inhalant medications to obtain full benefit from inhalant</li> <li>Many long-acting bronchodilators and inhaled steroids will yield no benefit if not taken regularly and allowed to build-up to a therapeutic level in the body</li> </ul>
Weigh daily at the same time each morning, wearing the same amount of clothing, after emptying bladder and before eating or drinking.	<ul style="list-style-type: none"> <li>Instruct patient on proper technique for daily weights; instruct patient on importance of obtaining a scale if he/she does not already own one</li> <li>Instruct patient to report a weight gain of 2-3 lbs. in 24 hours or 5 lbs. in one week</li> </ul>

# Decision Support Tool: COPD



Nurse Name: \_\_\_\_\_

Date: \_\_\_\_\_

## NURSING POST TEST

### Disease Management

**Directions: Choose the ONE BEST response to the following questions. Circle the answer that identifies the ONE BEST response.**

1. Disease management is a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant.
  - A. True
  - B. False
  
2. Essential clinical components of disease management include all of the following **except**:
  - A. Utilize clinical specialists in specific disease area (e.g. heart failure or COPD)
  - B. Optimize medication therapy and assess for appropriateness
  - C. Provide intensive comprehensive patient education
  - D. Use specialized outpatient clinics for disease management instead of home care
  - E. Provide early attention to signs and symptoms of exacerbation
  - F. Address barriers
  
3. “Polish Your Practice” (heart failure and COPD) encourages brushing up on the following areas to improve disease management:
  - A. Pathophysiology and symptom management
  - B. Assessment parameters
  - C. Current and appropriate treatment
  - D. Self-management and self-management support
  - E. All of the above
  
4. A decision support tool can assist a clinician in determining how to respond to abnormal signs and symptoms.
  - A. True
  - B. False
  
5. Three significant ways to improve chronic disease management include all of the following **except**:
  - A. Provider coordination across the continuum
  - B. Communication with patient and all providers
  - C. Patient empowerment
  - D. Using specialized outpatient clinics for disease management instead of home care